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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,959	11/14/2003	Kyu-Cheol Shin	1349.1312	7782

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EXAMINER	
GLEITZ, RYAN M	
ART UNIT	**PAPER NUMBER**
2852	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H:D

Office Action Summary	Application No.	Applicant(s)	
	10/706,959	SHIN, KYU-CHEOL	
	Examiner	Art Unit	
	Ryan Gleitz	2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) *1-16,35 and 36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-23,25,26,28-30,32 and 34* is/are rejected.

7)☒ Claim(s) *24,27,31 and 33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species II in the reply filed on 15 June 2005 is acknowledged. The traversal is on the following ground(s):

(1) The various embodiments are so closely related as to not require separate fields of search.

(2) No rationale supporting that the embodiments are either independent or distinct.

This is not found persuasive because of the following:

(1) In a species restriction, it is not necessary to show a separate status in the art or separate classification. See MPEP 808.01(a).

(2) Species I and Species II are independent because they are species under a genus which species are not usable together as disclosed. See MPEP 802.01. Specifically Species I and Species have mutually exclusive characteristics, that is either a single power unit or separate power units.

Additionally, applicant submits that claims 1-12 and 17-24 read on Species II, which corresponds to figure 2. However, claims 1-12 recite a single power supply unit for the charging units, the developing units, and the transfer units, which is not disclosed as part of Species II. Instead, these claims read on Species II, which corresponds to figure 7.

Also, applicant submits that at least claims 1, 11, and 12 are generic to both species. None of these claims are generic because Species I is not disclose to have a single power supply unit for the charging units, the developing units, and the transfer units. See MPEP 806.04(d).

The requirement is still deemed proper and is therefore made FINAL.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "zener diode" (claims 6, 10, 16, 19, 21, 24, 31) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract is objected to because it exceeds 150 words.

The disclosure is objected to because of the following informalities:

on page 1, line 17, "tendem" should be --tandem--; and

on page 3, line 8, "A" should be --a--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 28 and 34 each recite a developing power transforming unit, which is described by the specification as one form of the developing power supply unit. See Specification, p. 3, [0015]. The developing power transforming unit corresponds to reference numeral 26. See Specification, p. 9, [0039].

However, the developing power supply unit has already been recited in claim 17, upon which claims 28 and 34 depend.

Therefore, claims 28 and 34 are indefinite because they recite a limitation that corresponds to a part that has already been recited in the independent claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 22, 23, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Ono et al. (JP 2002-148888).

Ono et al. disclose an image forming device including a plurality of photosensitive bodies (101), one for each color of a composite color image; a plurality of charging units (102) which charge a surface of each of the plurality of photosensitive bodies (101) so that an electrostatic latent image is formable thereon; a plurality of developing units (103) which develop electrostatic latent images formed on the surfaces of the plurality of photosensitive bodies (101); a plurality of transfer units (104) which transfer developed electrostatic latent images onto a transfer medium; a charging power supply unit (312) which powers the plurality of charging units (102); a developing power supply unit (313) which powers the plurality of developing units (103); and a transfer power supply unit (311) which powers the plurality of transfer units (104).

Regarding claims 22 and 29, a plurality of developing voltage dropping units (DC-Y, DC-M) are shown in figure 2, each of which is disposed between the developing power supply unit (313) wherein the plurality of developing units includes an upstream developing unit and downstream developing units and the plurality of developing voltage dropping units respectively drop the voltages of the power supplied to each of the downstream transfer units to yield respective developing voltage level gaps in the developing power supplied to each of the plurality of developing units.

Regarding claims 23 and 30, the developing units have different colors, cyan, magenta, and yellow, and the charge to mass ratio of different colored developers is inherently different.

Claims 17, 22, 23 25, 26, 29, 30, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimazu et al. (JP 2000-162880).

Shimazu et al. disclose an image forming device in figure 8, including a plurality of photosensitive bodies (222), one for each color of a composite color image; a plurality of charging units (223) which charge a surface of each of the plurality of photosensitive bodies (222) so that an electrostatic latent image is formable thereon; a plurality of developing units (224) which develop electrostatic latent images formed on the surfaces of the plurality of photosensitive bodies (222); a plurality of transfer units (225) which transfer developed electrostatic latent images onto a transfer medium. The circuit block labeled I, or alternatively the bus connected to charging units (222), is a charging power supply unit which powers the plurality of charging units. The circuit block labeled I, or alternatively the bus connected to developing units (224) is a developing power supply unit which powers the plurality of developing units. The circuit block labeled II is a transfer power supply unit which powers the plurality of transfer units.

Regarding claims 22 and 29, a plurality of voltage dropping units (Va1-Vd1) each of which is disposed between the developing power supply unit and the respective ones of the plurality of developing units (224) and which drop a voltage of a developing power supplied by the developing power supply unit to the plurality of developing units to yield respective developing voltage level gaps in the developing power supplied to each of the plurality of developing units, wherein the plurality of developing units includes an upstream developing unit

and downstream developing units and the plurality of developing voltage dropping units respectively drop the voltages of the power supplied to each of the downstream transfer units.

Regarding claims 25 and 32, each of the plurality of developing units (224) includes a developing roller and a feeding roller, as shown in figure 8 but no reference numerals are assigned, which feeds developer onto a surface of the developing roller.

Regarding claim 26, because the feeding rollers contact the developing rollers, the feeding rollers are inherently respectively powered by the voltages output by the plurality of developing voltage dropping units (Va1-Vd1).

Regarding claims 23 and 30, the developing units have different colors, cyan, magenta, and yellow, and the charge to mass ratio of different colored developers is inherently different.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US 6,421,521) in view of Ono et al. (JP 2002-148888).

Tanaka disclose an image forming device including a plurality of photosensitive bodies (10K,Y,M,C), one for each color of a composite color image; a plurality of charging units (corona shown in figure 1) which charge a surface of each of the plurality of photosensitive bodies (10) so that an electrostatic latent image is formable thereon; a plurality of developing

units (shown in figure 1) which develop electrostatic latent images formed on the surfaces of the plurality of photosensitive bodies (10); a plurality of transfer units (25K,Y,M,C) which transfer developed electrostatic latent images onto a transfer medium; and a transfer power supply unit (31) which powers the plurality of transfer units (25).

Regarding claims 18-21, zener diodes (32T,S,F) are transfer voltage dropping units each of which is disposed between the transfer power supply unit (31) and respective ones of the plurality of transfer units (25) and which drop a voltage of a transferring power supplied by the transfer power supply unit (31) to each of the plurality of transferring units to yield respective transferring voltage level gaps in the transferring power supplied to each of the plurality of transfer units (25), wherein the plurality of transfer units include an upstream transfer unit and downstream transfer units, and wherein the plurality of transfer voltage dropping units are respectively disposed between the transfer power supply unit and the transfer units and which drop the voltages of the power supplied to each of the downstream transfer units to yield respective transferring voltage level gaps in the transferring power supplied to each of the plurality of transfer units.

Tanaka does not disclose a common charging power supply or a common developing power supply.

However, Ono et al. discloses a power supply (313) common to a plurality of developing units and a power supply (312) common to a plurality of charging units.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming device of Tanaka with the common power supplies

taught by Ono et al. to reduce the number of components used to supply power, improving cost and size of the device. See Ono et al., abstract.

Allowable Subject Matter

Claims 24, 27, 31, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ng et al. (US 5,159, 357) disclose that different color developers inherently have different charge to mass ratios.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rg

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